CHAPTER 3B. PAVEMENT AND CURB MARKINGS

Section 3B.02 No-Passing Zone Pavement Markings and Warrants

Insert the following at the end of the second Standard subsection:

Option:

A one-way no-passing marking may be placed on any approach to an intersection.

Guidance:

No-passing zone markings should be placed on stopped approaches to intersections to prohibit passing for the last five seconds of travel distance at the posted speed. See Table 3B-100 of this *Alaska Traffic Manual Supplement*.

Insert the following between paragraph one and two of the third Standard subsection:

The minimum length of the no-passing zone for one direction of traffic shall be not less than 500 feet. The minimum gap in successive no passing zones for one direction of traffic shall be not less than ten seconds travel at the 85th percentile, or the posted speed, whichever is higher.

Insert the following at the end of the last Support subsection:

Where placement depends on advance time of travel, Table 3B-100 gives equivalent distances. Distances are rounded to the nearest 5 feet.

Table 3B-100
Distance Traveled (Feet)

Speed (mph)	Time (sec.)	
	5	10
15	110	220
20	145	295
25	185	365
30	220	440
35	255	515
40	295	585
45	330	660
50	365	735
55	405	805
60	440	880
65	480	955
70	515	1030

Section 3B.05 Other White Longitudinal Pavement Markings

Delete the third Option subsection second paragraph and insert the following:

Lane drop markings as shown in Figure 3B-10 may be used in advance of lane drops at exit ramps to distinguish a lane drop from a normal exit ramp or from an auxiliary lane. The lane drop marking may consist of a 8-inch wide, white dotted line with line segments 3 feet in length, separated by 9-foot gaps.

Section 3B.17 Crosswalk Markings

Add the following at the beginning of the first Standard subsection:

Crosswalk markings shall be placed at the following locations:

A. At officially designated school crossings

B. At intersections controlled by traffic signals where pedestrian phases are used

Delete the second sentence of the Standards subsection and insert the following:

They shall be 24 inches wide.

Delete the first sentence of the first Guidance subsection and add the following:

Marked crosswalks should not be less than 10 feet wide.

Delete the third, fourth, and fifth paragraphs of the Guidance subsection and add the following:

Where crosswalks are marked on approaches controlled by traffic signals or stop signs, border (transverse line) crosswalks should be used.

Where crosswalks are marked at other locations, ladder crosswalks (using longitudinal lines but not transverse lines) should be used.

Decisions to mark crosswalks should be made in accordance with Table 3B-101.

Table 3B-101 Recommended Practice for Crosswalk Marking at Uncontrolled Crossings

No of Lanes	Raised Median?	Vehicle ADT ≤9,000				Vehicle ADT >9,000 to 12000				Vehicle ADT >12,000 to 15,000			Vehicle ADT >15,000		
		Speed Limit (MPH)													
		≤30	35	40	≥45	≤30	35	40	≥45	≤30	35	≥40	≤30	35	≥40
2	No	C		M	N	C	C	M	N	C	C	N	C	M	N
3	No	C	C	M	N	C	M	M	N	M	M	N	M	N	N
≥4	Yes	C	C	M	N	C	M	N	N	M	M	N	N	N	N
≥4	No	C	M	N	N	M	M	N	N	N	N	N	N	N	N

C

Candidate sites for marked crosswalks. Before marking a crosswalk, the site should be studied to ensure it is suitable. The study may include a review of pedestrian volumes, available gaps, sight distance (see A below), vehicle mix, pedestrian mix, distance to adjacent crossings (see B below), etc. Crosswalks should not be installed at locations with fewer than 20 pedestrian crossings per peak hour (or 15 for elderly and/or child pedestrians).

M

Marginal candidate sites for marked crosswalks: Pedestrian accident risk may increase if crosswalks are marked. If pedestrian improvements are necessary, other options should be explored before marking crosswalks.

N

Crosswalks should not be installed at these locations.

Source: FHWA-RD-01-075, *Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations*, 2002

A. Marked crosswalks should not be installed at uncontrolled crossings where visibility distance of pedestrians or the crosswalk would be less than the "Stopping Sight Distance for Design" given in the latest version of the AASHTO *A Policy on Geometric Design of Highways and Streets*. Desirably, crosswalks would only be installed where there is sufficient sight distance to allow pedestrians to cross the road without conflicting with vehicles continuing at the 85th percentile speed, assuming the pedestrian starts walking at the moment the vehicle comes into sight. Pedestrian crossing time should be computed in accordance with the procedure for determining adequate gaps given in the Institute of Transportation Engineers *Traffic Engineering Handbook* (page 78 in the 4th Edition).

B. Crosswalks should not be installed at uncontrolled locations where they will encourage pedestrians to divert from nearby signalized or grade-separated pedestrian crossings.

At mid-block crossings, parking shall be prohibited for at least 40 feet in advance of the crosswalk and at least 20 feet beyond the crosswalk for each direction of approaching traffic. Prohibiting parking 100 feet in advance and 50 feet beyond the crosswalk is desirable. These provisions do not apply when the curb is extended to near the edge of the parking lane at the crosswalk.

Add the following after the second Support subsection:

Locate crosswalks at intersections as shown in Figure 3B-100 on the following page.

Delete the first Option subsection.

Delete the first and second sentences of the second Guidance section and insert the following:

If used, the "rungs" of ladder crosswalks should be 24 to 36 inches wide and spaced 24 to 36 inches apart. The spacing design should avoid wheel paths.

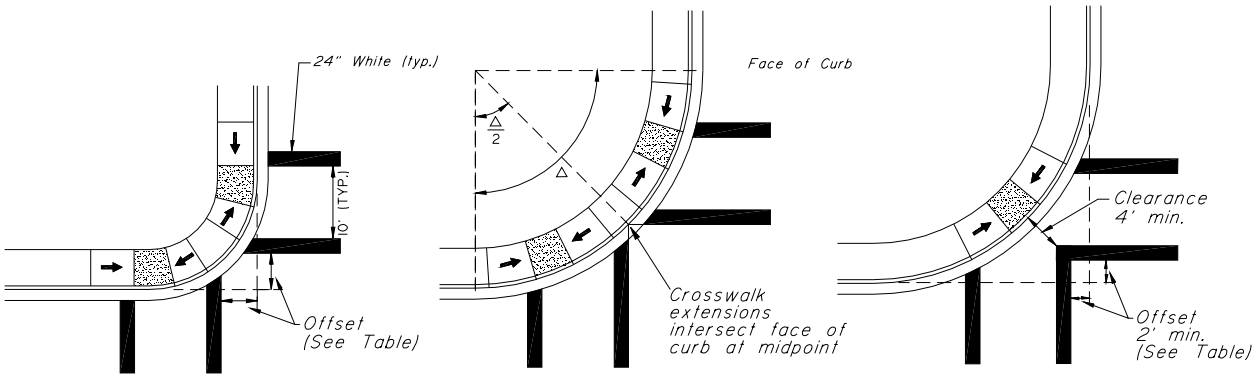
Section 3B.100 Markings for Climbing and Passing Lanes

This is a new section. There is no corresponding section in the MUTCD.

Sections 3B.28 through 3B.99 are reserved for future MUTCD use.

Support:

See Figure 2B-100 for pavement marking layout for climbing and passing lanes.



CASE 1

Dual Curb Ramps
Radius ≤ 25'

CASE 2

Dual Curb Ramps
25' < Radius ≤ 50'

CASE 3

Single Central Curb Ramp
25' ≤ Radius ≤ 50'
(Not Recommended)

CASE 1	
Crosswalk Offset From Face of Curb	
Radius (ft.)	Offset (ft.)
5	5
10	6
15	7
20	8
25	9

CASE 3	
Crosswalk Offset From Face of Curb	
Radius (ft)	Offset (ft)
25	2
30	3
35	5
40	6
45	8
50	9

NOTES:

1. The crosswalk locations shown in Figure 3B-100 assume a 90-degree intersection. Adjust as necessary on skewed intersections to ensure that crosswalk landings (for parallel curb ramps) or ramp runs (for perpendicular curb ramps) fall within the inner edges of crosswalk strips. If Case 3 (not recommended) is used, the layout should also be adjusted to provide at least the minimum clearance while maximizing the offset.
2. Although border (transverse line) crosswalks are shown, these details also apply to ladder (longitudinal line) crosswalks. When used, the outside of 10-feet wide ladder crosswalks should coincide with the inside of border crosswalks as shown here.
3. If only one crosswalk connects with a curb radius, it should be located as if there were two connecting crosswalks.
4. Case 3, the layout for a single central curb ramp, should be used only when installing two ramps is not feasible. It should not be used for radii under 25 feet on roads where parking is not allowed.
5. Radius is measured to the face of curb.

Figure 3B-100
Crosswalk Location at Intersections

CHAPTER 3C. OBJECT MARKERS

Section 3C.02 Markings for Objects in the Roadway

Add the following subsection after the first Standard subsection:

Guidance:

Type 1 Object Markers (OM-1) should be mounted directly below:

A. Each R4-7 sign on the lead end of a median

B. Each W12-1 DOUBLE ARROW sign

Insert the following at the end of the first Option subsection:

They may be mounted directly below each W1-6 and W1-7 ARROW sign.

Section 3C.03 Markings for Objects Adjacent to the Roadway

Add the following subsection after the first Support subsection:

Guidance:

Type 3 Object markers should be installed at bridges when any of the following conditions exist:

A. Total road width (shoulders plus traveled way) on the bridge is narrower than the total road width of the approaching roadway.

B. Total two-way road width is less than 18 feet.

C. No guardrail is attached to the bridge end (this is not meant to imply that object markers are an adequate substitute for crashworthy treatment of bridge ends).

When used, object markers should be on the nearest guardrail post to bridge abutments when there is an approach guardrail. When there is no approach guardrail, they should be mounted on the end of the bridge rail or on a separate post.

CHAPTER D. DELINEATORS

Section 3D.03 Delineator Application

Add the following at the end of the first Standard subsection:

Install delineators in accordance with Table 3D-100 on the following page. Delineators may also be used for applications not covered by the table, including safety emphasis areas.

See Section 3D of the MUTCD for additional guidance.

Add the following at the end of the section:

Guidance:

When used, snow pole delineators should be constructed in accordance with Figure 3D-100 and Figure 3D-101 of the *Alaska Traffic Manual Supplement*.

Option:

Snow poles may be installed in three layout patterns: Opposite, one-sided, or staggered.

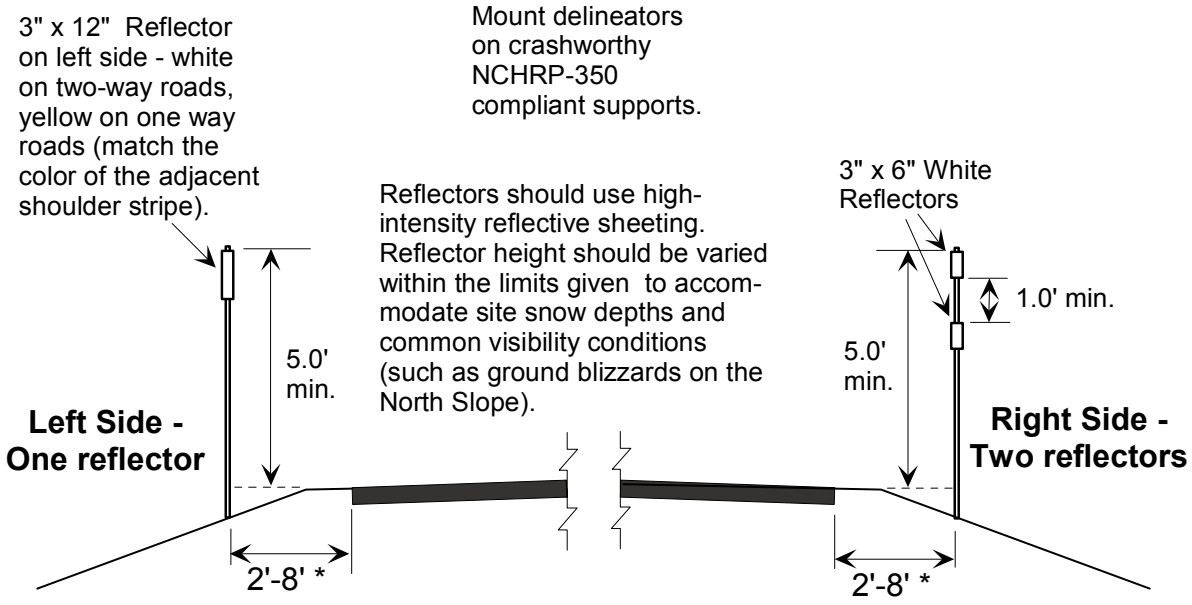
A. Opposite Layout (where poles are placed directly across from each other): The opposite layout is the most desirable because drivers just drive through the "gate" between poles in low-visibility conditions.

B. One-sided Layout: The one-sided layout has the advantage of being less expensive than the opposite layout (at a given spacing) and of not confusing drivers as to whether they should drive to the left or right of a pole (as the staggered layout does).

C. Staggered Layout: The staggered layout is the least desirable layout because drivers sometimes lose count when they can only see one delineator at a time and forget whether they should drive to the left or right of delineators.

Table 3D-100
Delineator Application

Application	Required/ Optional	Delineator Type	Spacing		Offset from Edge of Pvmt	Post Material	Notes
			Tangent	Curves <40 MPH			
Right side of Freeways and Expressways, and one side of interchange ramps	Required except when exempting conditions of MUTCD Section 3D.03 are met	See MUTCD Section 3D.02	See MUTCD Section 3D.04	See MUTCD Section 3D.04	8'	Crash-worthy support (NCHRP-350)	Red reflectors should be placed on the back of delineators on one-way roads.
Along acceleration or deceleration lanes and at median cross-overs	Optional	See MUTCD Section 3D.02 (double height reflector)	See MUTCD Section 3D.04	See MUTCD Section 3D.04	2' – 8'	Crash-worthy support (NCHRP-350)	Delineators provide better guidance to motorists when they are placed close (2') to the edge of pavement. However, offsets nearer 8' make road maintenance easier. Maintenance workers should be consulted when determining delineator offsets.
Areas with poor winter visibility	Optional	Shoulder snow pole (see Figure 3D-100)	200' max.	100' max.	2' - 8'	Crash-worthy support (NCHRP-350)	
Areas with poor winter visibility and extremely heavy snow accumulations	Optional	Overhead snow pole (see Figure 3D-101)	200' max.	100' max.	12'	Steel pipe, concrete foundation, breakaway base	
Guardrail End Terminals (GETs)	Required On state highways	Terminal Marker Posts	On every GET	On every GET	At GET	Two flexible delineators, one at each end of GET	Each delineator should have at least a3” x 6" area of reflective sheeting with color matching edgeline



* Delineators provide better guidance to motorists when they are placed close (2') to the edge of pavement. However, offsets nearer 8' makes road maintenance easier. Maintenance workers should be consulted when determining delineator offsets.

Figure 3D-100
Shoulder Snow Pole

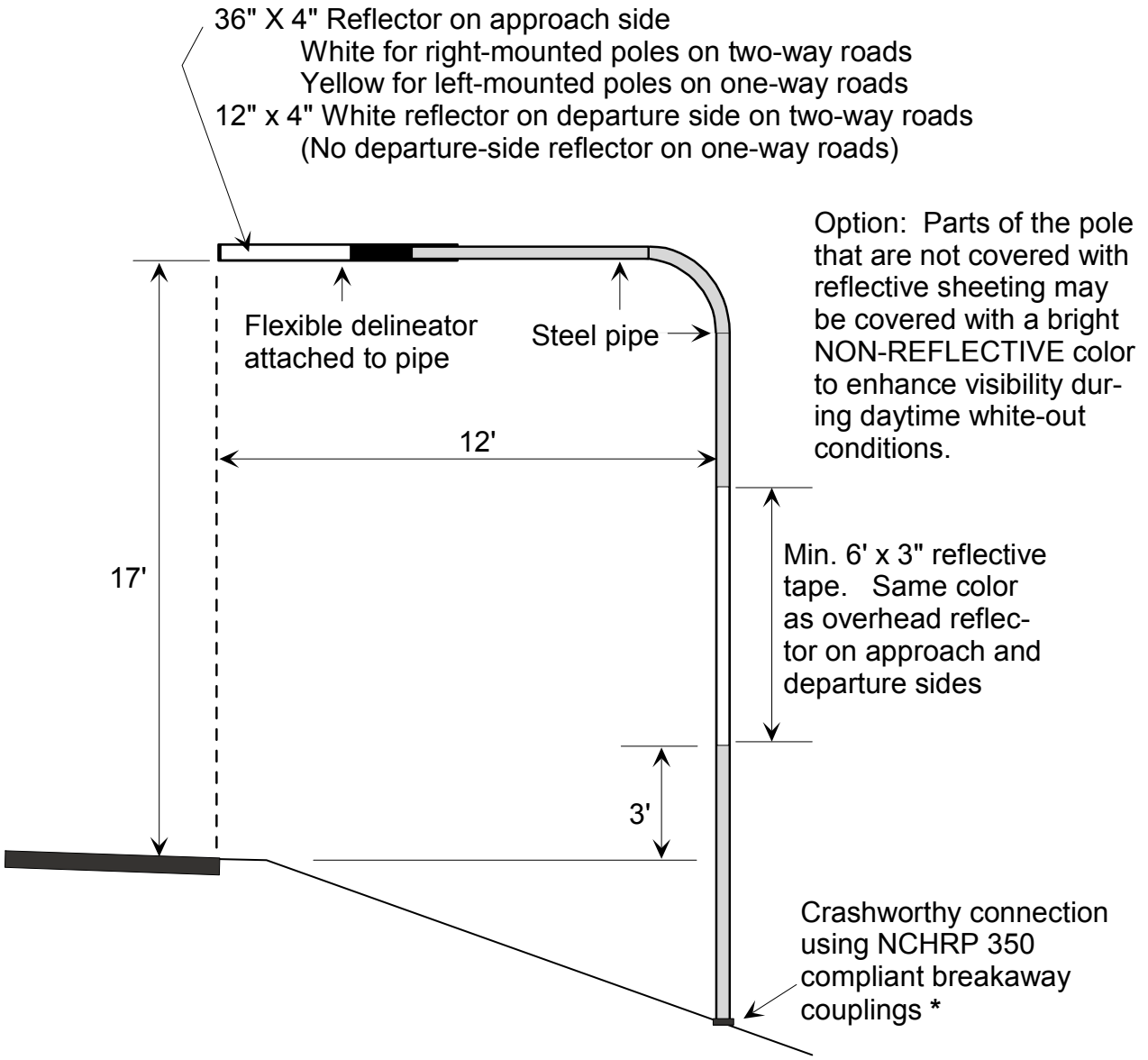


Figure 3D-101
Overhead Snow Pole